

**MOUNTAIN PINE BEETLE  
CONTROL PROJECT  
FAIRFIELD RANGER DISTRICT  
5/19/58 - 7/10/58**

[illegible]

Prepared by  
Craig W. Rupp  
District Forest Ranger

S, CONTROL, Insects  
Mountain Pine Beetle  
Fairfield Ranger District.

The effectiveness of the insect control project on D-4 cannot be positively determined until a post control survey is made.

The Statistical, organizational and operational data concerning the project itself is available. Following is a narrative and statistical analysis of the project.

The project started on May 19, 1958 with a two day training session. Walt Cole, entomologist, Boise Research Center aided us in all the training phases during this two day period as well as with follow-up training throughout the project. On May 21 we began spotting and treating on the Big Smoky and South Boise drainages. Flood conditions on Big Smoky and high water in the South Boise prevented men and horses from stream crossings except at the Boardman creek bridge or narrow spots where a tree could be felled across to serve as a foot bridge. As much as two hours of walking was necessary to reach the treating areas which were only 50 yds across the stream. The same problem was of course encountered with insecticide delivery. Solutions to the delivery problem was found and bears mentioning since future projects in the same area will encounter the same problems in the spring of the year. The delivery problem was solved by Stokesberry in the following manner: One gallon of EDB concentrate was placed in each 5 gallon jeep can to be delivered across the stream. A 1/2" line was thrown across the stream and three cans were tied together and threaded onto the 1/2" line. Another line 1/4" was thrown across the stream and one end tied to the cans. Another 1/4" line was tied to the cans from the delivery side. The 1/2" line had a slight down stream angle. The cans were then floated and the current and help from the other side with the 1/4" line floated the 3 cans across. When the cans arrived there they were filled with water bringing the concentrate to treating strength. The empties came back in the same manner with the aid of the other 1/4" line. Strategic delivery points were selected so that one or two points were used per day. Due to the steep country and large amounts of down timber the insecticide was then delivered to the treaters by manpower rather than horseback. The scattered nature of the infested timber, the high water and the steep terrain in this area reduced daily output by 50% over the remainder of the project.

The project proceeded according to plan from here on with the exception of difficulties encountered with equipment and materials. Here I will discuss some of the problems and discoveries in length in the interest of improving some of the items or methods in future projects.

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The telescoping rods, aluminum and steel, proved troublesome and of poor quality. The aluminum rods were the poorer of the two, in tightening spray nozzels or packing nuts the threaded end sheared. The aluminum rod in the fully extended position was much too flexible for efficient use. Both aluminum and steel rods were too flexible in their extended position to hold their original shape. The result was that by the end of the project none of the eight telescoping rods would retract.

The use of two-horse trailers for transporting jeep cans is more efficient than the use of a truck. The trailer can be attached to the same truck hauling men and thus one trip will suffice for delivering men and insecticide. Because of the low floor in a trailer it is much easier for a man to load full jeep cans. One disadvantage is the inability to pull a trailer on the poorer class roads.

From the operational standpoint EDB is far superior to Ortho. Five gallons of Ortho made 35 gallons of insecticide of which 30 gallons was fuel oil. Five gallons of EDB made 150 gallons of insecticide of which 23 gallons was fuel oil, the remainder of the EDB solution was water which could be added at any convenient place on the job.

The mixer on this type job should have a staggered work day beginning at 6:00 A.M. and ending at 7:00 P.M. mixing, delivery and pickup is best effected before and after crew work hours.

A ready supply or supplier of neoprene gaskets and felt washers should be located. The felt washers are the first item to cause trouble on the stirrup pumps. The neoprene gaskets are essential on the jeep cans. Both of these items are hard to purchase and expensive to have made by local suppliers.

The best method of marking trees to be treated is with a can of spray paint as used in marking timber. A circle of paint was made around each tree and the number of the tree in that strip painted below the circle, this I feel, is superior to blazing the tree and marking the number on the blaze. The painted circle allows the treating crew to see the tree from any approach angle. It also takes less time to circle the tree with paint and paint the number than to blaze and write the number.

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The mixing plant, while adequate, could be improved by raising the barrels of EDB and Triton to the same level as the mixing vats. This would reduce the stepping up and down for the mixer. Rather than mixing in two 55 gallon drums standing on end it would be preferable to lay the barrels on their side with a six inch opening the length of the barrel. This would reduce the amount of lifting the mixer would have to do (EDB weighs 18 lbs per gallon) and it would also reduce the splash encountered with open top barrels. The spigots used on the barrels were 3/4" hose bibs, these should be larger, 1 1/2" to 2" for more efficient filling of jeep cans.

The manila tags used by the spotters to designate tree locations were blank and thus had to be filled out completely by the spotters. When the treaters picked up the tags they too had to complete the reverse side. All this writing could be transferred to more effective field time by the use of rubber stamps. The information desired could then be stamped on the tag in advance and the spotters and treaters would only have to write a minimum of information. This would also reduce the amount of information lost because someone forgot what was wanted.

Example of stamp for Spotter side:

Line No. \_\_\_\_\_ Date: \_\_\_\_\_  
Tree No(s) \_\_\_\_\_ Spotter: \_\_\_\_\_  
Location \_\_\_\_\_

Example of stamp for Treater side:

Line No. \_\_\_\_\_ Date: \_\_\_\_\_  
Tree No(s) \_\_\_\_\_ Treater: \_\_\_\_\_  
Gal EDB used \_\_\_\_\_  
Tree felled \_\_\_\_\_ yes \_\_\_\_\_ No \_\_\_\_\_  
DBH \_\_\_\_\_ inches.

There should be at least one four wheel drive vehicle on a project of this size. The trainer-checker has a large amount of ground to cover each day. Open country and old mining roads can be navigated with 4 wheel outfits to advantage thus saving valuable time.

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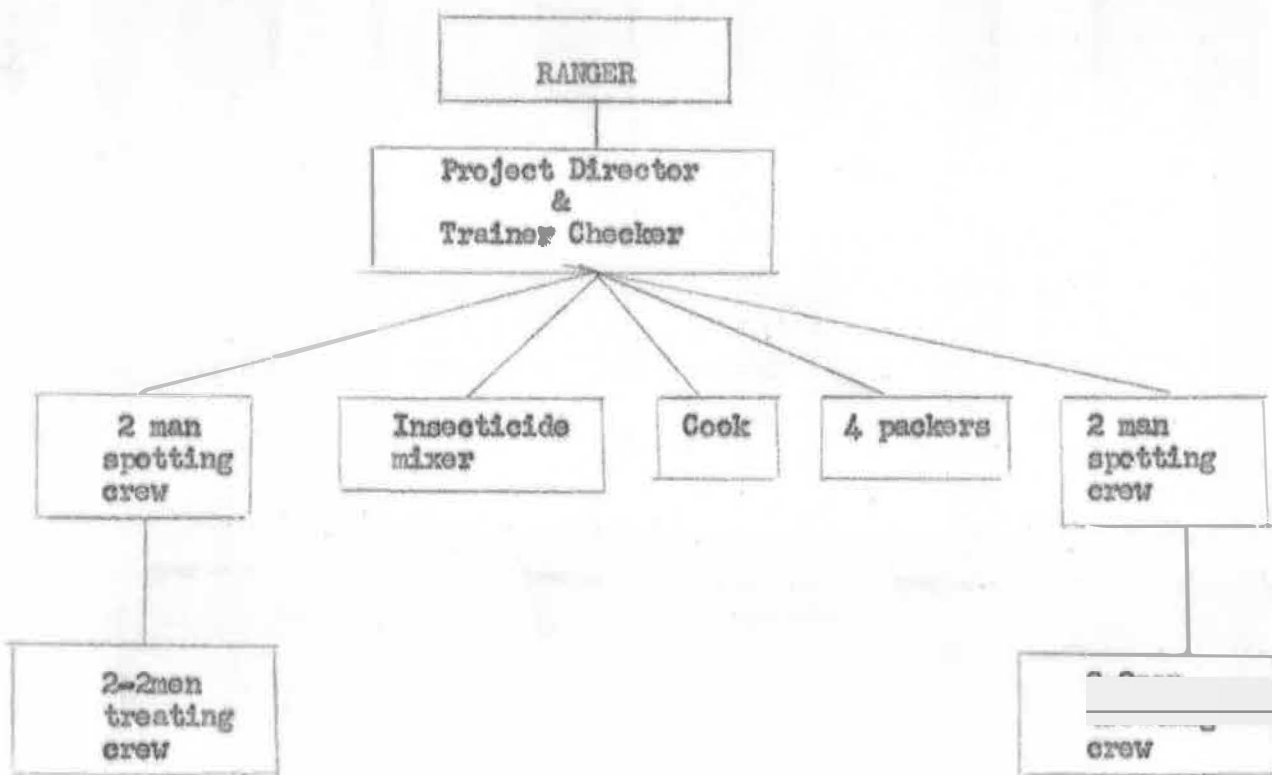
If another project is necessary in the near future I feel the afore mentioned items should be considered seriously along with taking advantage of Stokesberry's knowledge and training.

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STATISTICS  
MOUNTAIN PINE BEETLE CONTROL PROJECT  
Fairfield Ranger District  
5/19/58 - 7/10/58

HEADQUARTERS: Big Smoky Guard Station

ORGANIZATION:



The only changes in this organization were an increase or decrease in crew size as the situation dictated.

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AREA COVERED:

A total of 5100 acres were treated. The breakdown by areas is as follows:

<u>Area Name</u>	<u>*Map number</u>	<u>Acres</u>
Basalt	1	600
Big Smoky	2	500
Blackhorse	3	50
Carrie	4	350
Five Point	5	500
Grindstone	6	400
Little Smoky (To Five Point)	7	750
Little Smoky (To Red Rock)	8	850
Liberal	9	750
Paradise	10	150
South Boise	11	200
Total		5100

\*See attached maps

TREES SPOTTED AND TREATED:

A total of 2727 trees were spotted and a total of 2781 trees were treated.

The breakdown by areas is as follows:

<u>Area Name</u>	<u>*Map Number</u>	<u>Trees Spotted</u>	<u>Trees Treated</u>
Basalt	1	1008	1010
Big Smoky	2	301	334
Blackhorse	3	1	1
Carrie	4	75	75
Five Point	5	131	131
Grindstone	6	128	129
Little Smoky (To Five Point)	7	206	206
Little Smoky (To Red Rock)	8	334	337
Liberal	9	393	393
Paradise	10	25	35
South Boise	11	127	132
Total		2727	2781

\*See attached maps

INSECTICIDES USED:

900 gallons Ortho Dichlorobenzene  
11250 gallons Ethylene Dibromide

7.2 gallons per tree

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**TREES FELLED:**

Approximately 700 trees were felled to facilitate complete treatment.

**PERSONNEL:**

District Ranger  
Project Director  
Mixer  
Spotters:

C. W. Rupp  
F. W. Stokesberry  
K. Burrell  
T. Morris  
H. Hayes  
M. Harding  
B. Baumert  
D. Smith  
H. Edholm  
T. Morris  
H. Hays  
M. Harding  
H. Anderson  
L. Burr  
R. Condie  
A. Dahl  
Howard Flake  
Harold Flake  
J. Hansen  
T. Randolph  
L. Staples  
J. Wilson  
L. Call  
Larry Robertson  
Leroy Burr  
J. Stokesberry  
C. Helms  
B. Baumert

**Treaters:**

Chain Saw Operator:  
Chain Saw Helper:  
Cook  
Cook's Helper  
Packer

**MAN DAYS WORK:**

Mixing	40 man days
Spotting	114 man days
Treating	362 man days

Man Days mixing per tree	.014
Man Days spotting per tree	.041
Man Days treating per tree	.130
Average man days per tree	.185

**EQUIPMENT USED:**

200 Jeep cans  
9 Stirrup Pumps  
7 Telescoping spray booms  
3 Two section spray booms



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TRANSPORTATION;

1 • 4-wheel drive jeep  
1 • 1/2 Ton pickup  
2 • 3/4 Ton pickup  
3 • horses  
1 • mule

COSTS:

Total Project Cost:	\$18,000.00
Average cost/tree	<del>6.60</del> 6.47
Office overhead charges	2,700.00
Labor	12,100.00
Insecticide	3,250.00
Transportation	950.00

Meals:

Total meals served	2,440
Cost of food	1,450.00
Cost of Labor (Cook & Helper)	1,190.00
Cost/meal	1.07

Following are some pictures taken during the project:

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Photo #1 Training session at Big Smoky Guard Station  
first day of project.

C.W.R.



Photo #2 Training session at mixing plant-  
Big Smoky Guard Station.

C.W.R.

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Photo #3 Mixing Plant at Big Smoky Guard Station.  
C.W.R.



Photo #4 Mixing plant at Big Smoky Guard Station.  
C.W.R.



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Photo #5 F.W. Stokesberry filling can from mixing  
vat. C.W.R.



Photo #6 Harding & Robertson spraying tree in  
Bounds creek campground.

C.W.R.



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Photo #7 Robertson spraying tree in Bounds creek  
camp.

C.W.R.



Photo #8 F. W. Stokesberry felling tree to be sprayed  
in Bounds camp.

C.W.R.

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#### APPENDIX

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PROJECT SAFETY PLAN  
BIG SMOKY INSECT  
CONTROL JOB

INTRODUCTION:

This plan is supplemental to both the District & Forest Safety Plan.

PURPOSE

The purpose of this plan is to provide complete safety training to all employees on the Big Smoky Insect Control Job.

OBJECTIVES

1. No lost time accidents.
2. No vehicle accidents.
3. To make all project men safety conscious.
4. To provide all practical safeguards to prevent accidents.

RESPONSIBILITIES

The project director is responsible for the entire district program. The project director is F. W. Stokesberry.

Individuals delegated to give safety training will be directly responsible to the project director.

Darrell E. Smith is designated safety officer. He will be responsible to the project director and will see that all safety requirements are met. He will report to the project director all safety hazards requiring his immediate attention along with recommendations for their removal.

All employees will be responsible for their own safety and will do all that is possible to prevent accidents to others.

MEETINGS

Safety meetings will be held weekly. The project director will hold at least one meeting per month. The safety officer will conduct the remainder of the meetings. Meetings will be documented on the safety meeting form. The safety code will be used as a guide where applicable.

HAZARDS

Hazards of this project will be treated as covered in the district safety plan with one exception: The use of Ethylene Dibromide or Ortho Dichlorobenzene.

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Hazards due to the use of insecticides are particular to this type project and are herewith covered in length.

Ethylene Dibromide in the concentrated form is extremely harmful to warm blooded animals. Men can be seriously affected by inhalation of the vapors, and their bodily contact with the liquid.

The man mixing the insecticide will be the only man to handle the concentrate. No one else will be allowed to come in contact with the concentrate. The mixers and packers will be the only persons allowed to come in contact with the stock solution.

All mixing will be done outside.

A 55 gallon drum of water and a supply of rags will be on hand at the mixing station at all times.

The mixer will wear a rubber apron and rubber gloves while mixing or otherwise handling the concentrate.

The mixer or packers will wash off spillage.

Any clothing that becomes contaminated will be removed and washed or aired.

Properly handled EDB is not dangerous but improperly handled it produces serious burns, sickness and even death.

The finished EDB emulsion as applied to the trees is relatively harmless. However, if confined for extended periods in the clothing it will cause some burning and irritation. Each treating crew will carry a 5 gallon jeep can of water and a supply of clean rags.

Treating crews will wear clear plastic goggles.

Repeated exposure to spray drift and leakage will be avoided.

Each treating crew will carry a first aid kit.

All emulsions that reach the skin will be washed off immediately.

Treaters will wash their clothing at least once a week. If an unusual amount is spilled on the clothing they will remove their clothes immediately and flood with water.

In general whenever handling toxic chemicals, it is good business to be overly cautious rather than take a chance.

Hazards due to the use of vehicles, lifting, climbing, tree falling, use of the axe and fire fighting will be covered as outlined in the forest and district safety plan.

BIG SMOKY INSECT CONTROL PROJECT  
JOB INSTRUCTIONS  
FOR THE  
MIXER

You will be under the direct supervision of the project director.

You will follow all safety instructions in the project safety plan.

Your job will consist of mixing the insecticide and supplying it to the packers.

All the insecticide will be hauled in the trailer. This is to prevent contact with the men who will ride in your truck. Each morning you will deliver half of the treating, spotting, and packing crews to their job along with a load of insecticide. You will then deliver insecticide the other



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half of the crew. It will be necessary to time your operation so that insecticide is available to the crews at all times. Between deliveries it will be necessary to mix and can additional insecticide.

Following is the mixture formulas:

Ortho Dichlorobenzene  
1 - 5 gallon jeep can of ortho  
6 - 5 gallon jeep cans of fuel oil  
This is sprayed as mixed.

Ethylene Dibromide  
EDB 1 jeep can (5 gals)  
Triton 151 1/3 gallon  
Triton 171 1 2/3 gallon  
Fuel oil 23 gallon

One gallon of this stock solution EDB is put in each jeep can and delivered to the job. Water is added at the first convenient place.

#### JOB INSTRUCTIONS for SPOTTING CREW

Spotters are responsible for detecting and recording all infested trees within the units and for string-lining. String lines running perpendicular to the contours will be two chains apart. One spotter will string marking twine while the other spotter meanders within this swath detecting, painting, and tagging (by serially numbering) all infested trees. As trees are spotted he calls the number(s) to the stringer who records them and their direction from the string on a similar tag and hangs this tag on or near the string. These two men will proceed as nearly parallel as possible to save the treating crews time and effort in finding the infested trees.

#### INSTRUCTIONS FOR PACKERS

You will follow all safety instructions in the project safety plan.

It will be necessary for you to keep the treating crews supplied with insecticide.

Carry the stock solution to the closest creek to the crews, then fill with water. You can fill the cans with water by dipping or by using a stirrup pump if available.

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#### INSTRUCTIONS FOR TREATING CREW

The treating crews will work only two swaths at a time. The crew-leader will follow the even number string line, retrieving the tags left by the spotters, and with help from the crew search out the blazed and tagged trees. These tags will also be retrieved and brought in each night thus insuring all trees being treated that were spotted. Occasionally infested trees will be missed by the spotters. If the treating crews find such, then they are to treat these and record them as additional trees. The number of infested trees treated is important for the statistics of the project. An accurate record should be kept.

Once the tree has been spotted, the tag removed, the treating crew will spray the tree as completely as possible while it is standing. If the tree is too tall to be adequately covered full length while standing, then it should be felled and the untreated portion of the top sprayed. If the tree was felled prior to any treating then bucking and turning of the logs would be required to spray the "underside" that rests on the ground, thus causing undue excess work. Thoroughness in spraying is absolutely essential.

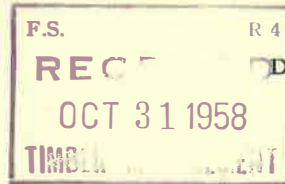
Actual treating should be done by two men: 1 man applying the insecticide and 1 man working the stirrup pump. Of course these 2 men can exchange jobs for relief.

## Office Memorandum • UNITED STATES GOVERNMENT

TO : Regional Forester

FROM : Forest Supervisor, By

SUBJECT: S, CONTROL - Sawtooth, Insect, Annual Report



DATE: October 29, 1958

Moncrief	
Frykman	
Grossenbach	
Cooney	
Morgan	
Lo	
Horn	
Miel	
Payne	

*Seen*

Attached are triplicate copies of the insect control work completed on the Sawtooth National Forest during the fiscal years of 1958 and 1959.

Mr. W. E. Cole and Mr. W. E. Mineau, Entomologists, have covered the insect problems on the Sawtooth National Forest in sufficient detail in their report Sawtooth National Forest Annual Aerial Survey dated August 1958. In connection with the Douglas Fir barkbeetle buildup on District 8, we are planning a logging program in that area to attempt to reduce the insect population and also salvage the salvable material. We are hopeful that we can secure timber access road funds to construct roads into the infested tree areas during this winter so that we can time logging operations to derive the greatest benefits in removing infested trees before the insects emerge.

As the result of the insect survey at the headwaters of the South Fork of the Boise River in Big Smoky area, we find that we have 2100 trees (lodgepole pine) in need of treating in the spring of 1959. An estimated \$18,500.00 is needed to finance insect control work on these trees. An additional \$2000.00 is needed for post survey work.

These figures were furnished to Mr. Paul Grossenbach as estimates for our fund needs for the year 1959.

I am enclosing a copy of Ranger Rupp's report covering the insect control work completed in the Little and Big Smoky areas this spring. This report has a number of suggestions that we believe will help in future insect control programs.

*E. M. Fink*

Attachments

TM FILE COPY

Form R4-TM4

S  
CONTROL  
Insect

Forest Sawtooth

ANNUAL INSECT CONTROL REPORT  
C. Y. 1958

1. Duration of project (field operating dates) 5/19/58-7/10/58
2. Tree species affected Lodgepole Pine
3. Insect responsible Mountain Pine Beetle (Dendroctonus monticolae)
4. Control method used Hand spraying with both orthodichlorobenzene and ethylene dibromide.
5. Acreage and trees treated:

	Acres	Trees
a. String-lined	5100	2781
b. Hot-spotted	120	123
c. Total in project	5220	2904

6. Project expenditures by funds:

	Forest Pest Control	Deficiency	Value contrib. time and Materials	Total
	F.Y. 1958	F.Y. 1959		
1. Control	\$19500	\$5000		\$24500
2. Surveys	OK			
a. Pest Control*	19500	390		
b. Pre-control*		1390		1390

\* Forest Service plus Bur. of Ent. Expenditures

7. Cost per tree (exclusive of survey costs) \$8.44
8. Cost per acre (exclusive of survey costs)
  - a. On area string-lined \$4.70
  - b. On area hot-spotted \$4.90
9. Percent of reduction obtained 70%
10. Man-days used on project (exclusive of surveys) 543
11. Cost per man day (exclusive of surveys) \$45.12

10/30/58

Date

Forest Supervisor